

Commonwealth Edison Company

Proposed general increase in electric rates

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: ICC Docket No. 10-0467
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**REBUTTAL TESTIMONY
OF**

HARRY L. TERHUNE

ON BEHALF OF THE COALITION TO

REQUEST EQUITABLE ALLOCATION OF COSTS TOGETHER

REACT

COMPRISED OF:

**A. FINKL & SONS, CO.
AUX SABLE LIQUID PRODUCTS, LP
THE CITY OF CHICAGO
COMMERCE ENERGY, INC.
FLINT HILLS RESOURCES, LP
FUTUREMARK PAPER COMPANY
INTEGRYS ENERGY SERVICES, INC.
INTERSTATE GAS SUPPLY OF ILLINOIS, INC.
THE METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO
PDV MIDWEST REFINING LLC
UNITED AIRLINES, INC.
WELLS MANUFACTURING, INC.**

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STATE OF ILLINOIS

BEFORE THE ILLINOIS COMMERCE COMMISSION

Commonwealth Edison Company

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ICC Docket No. 10-0467

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REBUTTAL TESTIMONY OF HARRY L. TERHUNE

I.

INTRODUCTION AND GENERAL CONCLUSIONS

Q. Are you the same Harry L. Terhune who provided direct testimony on behalf of the Coalition to Request Equitable Allocation of Costs Together (“REACT”) in this proceeding?

A. Yes. My direct testimony in this proceeding is REACT Ex. 3.0C.

Q. What was the general purpose of your direct testimony?

A. The general purpose of my direct testimony was to explain to the Illinois Commerce Commission (“Commission”) that ComEd’s proposed allocation of costs to the Extra Large Load customers is improper, and violates well-established cost-causation principles. Specifically, my direct testimony: (1) explained that cost allocations to a class of customers should be based on assets and related expenses reasonably associated with service to that class; (2) evaluated ComEd’s proposed allocation of retail delivery service costs to the Extra Large Load customer class; (3) established that under ComEd’s current and proposed tariff structure, certain costs of the distribution system have been improperly over-allocated to the Extra Large Load customer class in violation of basic

cost causation principles; and (4) recommended ways to correct this unjustified cost burden on the Extra Large Load customer class.

Q. What are the general purposes of your rebuttal testimony?

A. My rebuttal testimony explains that ComEd has continued to improperly over-allocate the costs of its assets to the Extra Large Load customer class. Specifically, my rebuttal testimony addresses elements of the rebuttal testimony of ComEd witness Lawrence S. Alongi (ComEd Exhibit 49.0) and Robert Garcia (ComEd Exhibit 50.0); and of the direct testimony of IIEC witness Robert R. Stephens (IIEC Exhibit 2.0). Part of my rebuttal testimony also is intended to help the Commission visualize the relationship between components of the retail delivery system and the customer classes that are the predominant users of those components, so as to demonstrate the need for improved allocation of revenue requirements arising from such components. I also comment on the proposed Primary Voltage Delivery customer class proposals made by Mr. Alongi and, separately, Mr. Stephens.

Q. How is your rebuttal testimony organized?

A. My rebuttal testimony has four (4) general components:

First, I will respond to Mr. Alongi's assertion that particular asset types should be included in the revenue requirement for the Extra Large Load class. In this section, I will match the assets that I described in my direct testimony with the assets in a couple of ComEd exhibits, and explain why certain assets should be removed from the assets

generally allocated to the Extra Large Load customer class. I also will address Mr. Alongi's statement that ComEd does not recover for the costs of certain assets under Rider NS.

Second, I will explain why -- in light of my discussion regarding assets used to serve the Extra Large Load class -- conducting a study of the actual assets used to serve the Extra Large Load class, using a statistically valid sampling methodology, is a necessary step to enable the Commission to create cost-based rates.

Third, I will address a few areas in which Mr. Alongi either misunderstands or misconstrues my direct testimony.

Finally, I will discuss the proposed Primary Voltage Delivery Rates proposed by Mr. Alongi (in Exemplar) and Mr. Stephens, and explain why these analyses are imperfect proxies for the underlying issue, *i.e.* providing service at rates based on cost causation principles.

Q. Please summarize your general conclusions and recommendations.

A. I have four general conclusions and recommendations:

1. **An Analysis of Assets Used to Serve the Extra Large Load Customer Class Is Necessary and Appropriate.** The Commission should compel ComEd to undertake a study of the assets used to serve the Extra Large Load class, and design rates based on the class's fair share of the assets that it actually uses. ComEd's primary/secondary study is evidence that ComEd has the necessary data and competence to perform such a study, if it were so directed by the Commission.
2. **REACT Is Not Requesting Individual Customer Cost-of-Serve Studies.** Contrary to Mr. Alongi's assertions, I am not recommending, nor have I ever recommended,

that ComEd undertake individualized cost-of-service studies for particular customers. In fact, I have consistently recommended that ComEd study the assets used to serve the Extra Large Load *class*, and set *class-based* rates appropriately from that study.

3. **ComEd’s Proposed Allocation Methodology Over-Allocates Substantial Costs to the Extra Large Load Customer Class.** The Commission should recognize that certain types of assets are rarely (if ever) used, to any significant degree, to serve the Extra Large Load class, and that the use of a non-coincident peak (“NCP-SEC”) allocator for secondary distribution system assets greatly over-allocates secondary costs to the Extra Large Load customer class.

4. **ComEd’s Exemplar Primary Rate Class Should Be Rejected.** Although some form of primary rate class may allocate costs better than ComEd’s proposed rates, the real issue is cost causation, and the Commission should keep sight of this issue by requiring ComEd to undertake the recommended study.

II.

COMED INCORRECTLY SUGGESTS THAT CERTAIN ASSETS THAT ARE LITTLE UTILIZED BY THE EXTRA LARGE LOAD CLASS ARE STANDARD PARTS OF SERVICE TO THE EXTRA LARGE LOAD CLASS

Q. Did ComEd agree with the conclusion in your direct testimony that certain assets are rarely used to serve the Extra Large Load class?

A. No. ComEd appears to disagree with my general conclusion that there are entire categories of assets that there are little utilized to serve the Extra Large Load customer class, although Mr. Alongi does not rebut many of the details in my testimony. (*See, e.g., ComEd Ex. 49.0 at 25:558-26:571.*) Further, in its responses to various Data Requests that we submitted to ComEd, ComEd confirmed many of the points that I made.

Q. What ComEd data request responses support the points made in your direct testimony?

A. ComEd’s data request responses confirmed that:

1. ComEd has the capacity to undertake the study I recommend identifying assets used to serve the Extra Large Load customer class with sufficient precision to provide adequate cost causation data. (*See, e.g.*, REACT Ex. 6.3, ComEd Responses to REACT 6.28 and 7.06-7.07; ComEd Response to CTA 3.04.).
2. ComEd has provided insufficient information regarding the assets that are used to serve the Extra Large Load customer class, either as part of Standard Service or non-standard service. (*See, e.g.*, REACT Ex. 6.3, ComEd Responses to REACT 6.06-6.07, 6.09-6.10, 6.29-6.36, 6.38, and 6.40.)
3. ComEd's responses have provided inadequate justification for allocating the assets that I identified in my direct testimony and below as of insufficient capacity to provide Standard Service. (*See, e.g.*, REACT Ex. 6.3, ComEd Responses to REACT 6.12-6.14, 6.16, 6.20, 6.22-6.25, 6.38, and 6.40.)
4. As a direct result of its current flawed ECOSS and related unjustified allocators, ComEd allocates costs to the Extra Large Load customer class for a wide variety of assets that ComEd cannot establish provide service to the class. (*See, e.g.*, REACT Ex. 6.3, ComEd Responses to REACT 6.20, 6.23-6.25.)

In other words, ComEd has acknowledged the major factual underpinnings of my direct testimony, with the exception of acknowledging that certain assets are unsuitable for provision of Standard Service, absent additional justification. (*See, e.g.* REACT Ex. 6.3, ComEd Response to REACT 6.06-6.07.)

Q. Have you changed your conclusion that certain assets are generally unsuitable to provide Standard Service to the Extra Large Load customer class?

A. No. As I will describe in greater detail below, I have evolved my opinions slightly with regard to ComEd's methods of recovering for assets used to provide non-standard service. However, as I describe in greater detail below, my conclusion that certain assets presently allocated to the Extra Large Load customer class are not used to serve that class is unchanged. Based on its Responses to certain Data Requests, it appears that ComEd's failure to acknowledge this point is a result of its stated inability to track which assets

provide non-standard service. (*See, e.g.*, REACT Ex. 6.3, ComEd Responses to REACT 6.10 and 6.33.)

Q. How do you respond to Mr. Alongi's assertion that ComEd has appropriately allocated assets to the Extra Large Load customer class?

A. Mr. Alongi seems to be content with continuing to simply repeating ComEd's mantra that ComEd's ECOSS is appropriate, ignoring the fact that ComEd's ECOSS does not accurately reflect the actual assets used to provide service to the Extra Large Load customer class. Instead of providing a complete analysis of ComEd's distribution system assets, Mr. Alongi instead has found apparently isolated examples to suggest that ComEd's overall flawed methodology should be accepted. (*See* ComEd Ex. 49.0 at 27:595-610 (setting out hypothetical three-mile wire but not providing any additional identifying information); 30:664-668 (identifying 46 4 kV service points for Extra Large Load class customers, but failing to identify whether these points are covered by Rider NS or for ComEd's convenience).)

My discussion below continues to be with regard to ComEd's Standard Service, as discussed in my direct testimony. (REACT Ex. 3.0C at 10:243-13:322, 14:341-18:438.) I will describe in further detail below why the baseline for allocating assets to a class's revenue requirement should be assets actually used to provide Standard Service. As previously described, ComEd may also provide service using different assets for its convenience or pursuant to a customer request for non-standard service, and generally recover those costs under Rider NS or Rider DE. (*Id.* at 16:398-17:409.)

A further illustration of the assets used to serve each customer class to clarify my direct testimony will help explain my position, and show why ComEd's criticism is incorrect.

Q. Are there any graphic aids that would help the Commission to visualize the system components and their relationship to the various customer classes?

A. Yes. I refer to three (3) diagrams that assist in illustrating the relationship of the categories of assets to the various customer classes:

- (1) a simplified drawing (REACT Exhibit 6.1) depicting representative physical elements of the ComEd system, with the caption "Commonwealth Edison Company, Chicago, Illinois, October 31, 1967." My understanding is that this document has been and may still be used in this or updated form as a handout for generations of customers, school groups, and others learning about the ComEd distribution system;
- (2) ComEd's own diagram from its Loss Factor study (ComEd Exhibit 34.1, Appendix B, "Simplified System Resistance Model"), which depicts the various paths from the bulk power system ("Generation and Transmission"), through the elements of the delivery system, to individual retail customers ("C"); and
- (3) ComEd's own color-coded primary distribution system diagram (ComEd Exhibit 49.5), depicting representative 12 kV main-stem, tap and phase relationships.

Q. Please describe the color coding on the first page of REACT Ex. 6.1.

A. Boxes and lines that are green indicate an asset that would normally be used to provide standard service to the Extra Large Load customer class. Boxes and lines that are red with Xs indicate assets that would generally not be used to provide standard service to the Extra Large Load customer class, although these assets -- to a very limited degree -- may in fact provide service to the class. For reference, a clean copy of ComEd Ex. 34.1 Appendix B is appended as page 2 of REACT Ex. 6.1.

**A. A Visual Representation of the Assets
Generally Used to Serve Different Classes Confirms
that Not All Assets Are Used to Serve the Largest Customers**

Q. Please walk us through the electric system elements, referring to those categories mentioned in your direct testimony (REACT Ex. 3.0C at 9:180-10:240), as well as to the pictorial (REACT Ex. 6.1) and the loss diagram (ComEd Ex. 34.1)

A. For each of the categories of assets and facilities identified in my direct testimony, I will identify its location on ComEd Ex. 34.1, and, as appropriate, the pictorial. In order to provide further clarity, I will include an additional category (Generation Resources) that was not discussed in my direct testimony.

Q. Please explain what constitutes Generation Resources and where those facilities would fall on the pictorial and ComEd Ex. 34.1.

A. Generation resources are electric energy production facilities (fossil, nuclear, etc.), shown in the top line of the ComEd pictorial, and included in box (20) of the loss diagram. Generation resources are reflected in commodity energy charges and billed separately and should not be part of the charges for distribution delivery service.

Q. Please explain what constitutes Category 1 from your direct testimony (“Bulk Electric System”) and where those facilities would fall on the pictorial and ComEd Ex. 34.1.

A. Bulk Electric System is the portion of the ComEd owned transmission system covered by FERC jurisdictional tariffs, depicted in part by the transmission terminal and transmission lines portion on the middle row of the ComEd pictorial and included in box (20) of the

loss diagram. Bulk Electric System charges at FERC rates are passed through to retail customers and my understanding is that they are allocated by the coincident peak contribution of each retail delivery customer class. Allocation of these costs is not at issue in the present case.

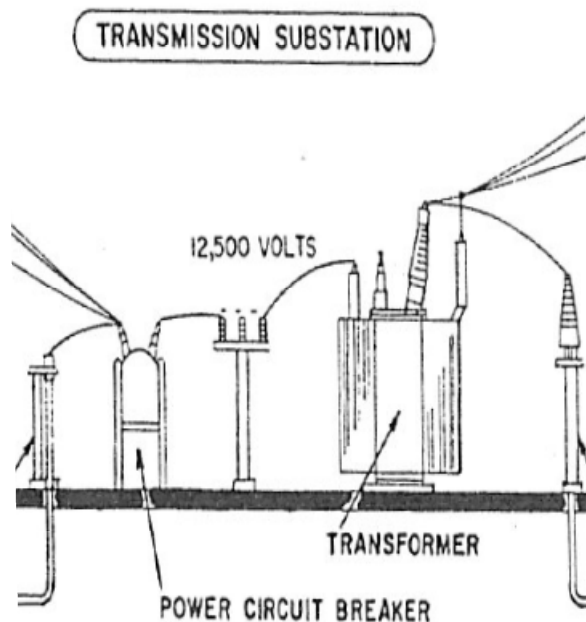
Q. Please explain what constitutes Category 2 from your direct testimony (“Transmission Voltage Delivery System”) and where those facilities would fall on the pictorial and ComEd Ex. 34.1.

A: The Transmission Voltage Delivery System is the remaining portion of the transmission terminal and transmission lines portion on the middle row of the ComEd pictorial, that is, those transmission voltage line and substation facilities under Commission jurisdiction. These facilities are also included in part in box (20) of the loss diagram as well as the in the lines connecting box (20) to boxes (1), (2), (3), (8) and to customer (20)-“C”, as well as the line from (2) to (8). It is my understanding that ComEd allocates the aggregate revenue requirements of the transmission portion of the delivery system (both transmission lines and transmission substations) by the coincident peak contribution of each retail delivery customer class. Again, I understand that the allocation of these costs is not at issue in the present case.

Q. Please explain what constitutes Category 3 from your direct testimony (“Distribution Substation Facilities”) and where those facilities would fall on the pictorial and ComEd Ex. 34.1.

A: Distribution Substation Facilities are the facilities that are depicted in the center of the ComEd pictorial and labeled “Transmission Substation,” and transform power and energy from a transmission voltage (345, 138, and/or 69 kV) to a distribution primary voltage (34, 12, and 4 kV). (See Diagram 1 below.) These substations are shown on the loss diagram as boxes (3) and (8); I understand that substation facilities transforming between two distribution primary voltages, but not on the ComEd pictorial, are also included in distribution substation facilities as boxes (5), (6) and (11).

Diagram 1 - Distribution Substation Facilities



Q; How does ComEd allocate the costs of Category 3 assets, and how would you recommend allocating those costs?

A. ComEd originally allocated the aggregate revenue requirements of distribution substations to the retail delivery customer classes on a coincident peak contribution basis, but now proposes to allocate on an NCP basis. (*Compare* ComEd Ex. 16.0R, at 29:543-544 *with* ComEd Ex. 50.0, Garcia Rebuttal at 5:110-115.) ComEd's current NCP proposal is appropriate because the localized peak of any individual distribution substation -- which drives the costs in this category -- may differ significantly in time and amount from the substation's load's contribution to the coincident system peak. ComEd's revision to this allocator is significant, insofar as it is a recognition by ComEd that assets should be allocated using allocators that reflect actual system design and operation.

Q. Please explain what constitutes Category 4 from your direct testimony ("Primary Distribution Lines") and where those facilities would fall on the pictorial and ComEd Ex. 34.1.

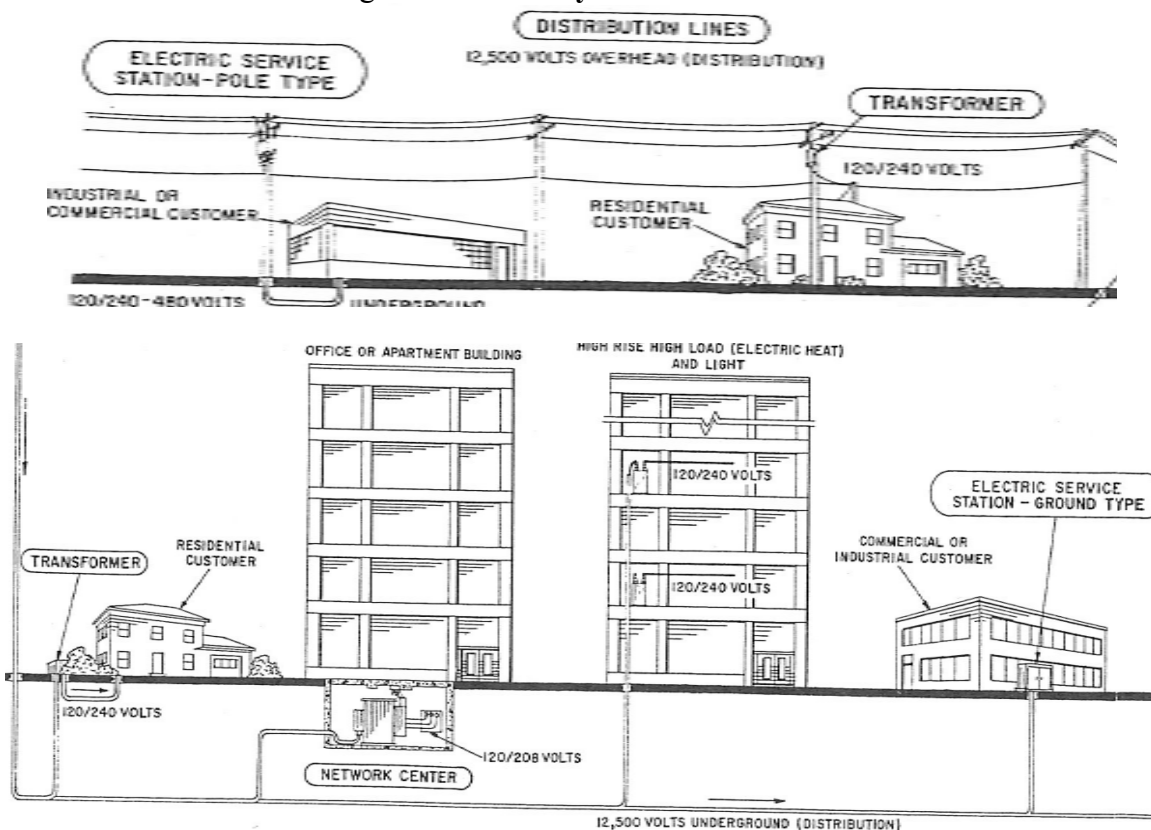
A. These facilities are depicted as overhead lines in the center row of the ComEd pictorial and as underground lines in the lowest row of the ComEd pictorial. (*See* Diagram 2 below.) Given the simplicity of the 1967 diagram, it does not specifically show single-phase overhead or underground lines as distinct from three-phase or two-phase lines. Primary distribution lines are shown on the loss diagram between boxes as noted:

- 34 kV lines: (3)-(4); (4)-(5), (4)-(6), (4)-(7);
- 12 kV lines/circuits/feeders: (5)-(10), (8)-(9), (8)-(10), (8)-(13), (9)-(11) ; (6)-(16); (8)-(9), (8)-(13), (13)-(14); and

- 4 kV feeders: (6)-(16), (11)-(16).

Looking specifically at ComEd Ex. 34.1, it becomes clear that many of the lines representing power lines of certain grades are connecting boxes that are not associated with provision of electricity to the Extra Large Load customer class.

Diagram 2 - Primary Distribution Lines



Q; How does ComEd allocate the costs of Category 4 assets, and how should those costs be allocated?

A. ComEd originally proposed allocation of the aggregate revenue requirements of primary distribution lines to the retail delivery customer classes on the basis of coincident peak contribution (ComEd Ex. 16.0R, at 29:543-544), but as noted above for substations, the loads driving the need for primary distribution lines differ significantly in time and

amount from the coincident peak. ComEd now has proposed to allocate these costs based on the non-coincident peak share of each customer class, and then within the class to the NCP of the customers. (See ComEd Ex. 50.0, Garcia Rebuttal at 5:110-115.). As noted in my direct testimony, it is not appropriate to allocate among the customer classes the aggregate revenue requirement associated with the primary distribution lines based solely upon NCP peak contribution. (See REACT Ex. 3.0 at 14:340-17:413.) However, after adjustments to achieve a proper class allocation of primary distribution lines revenue requirements, it is reasonable to allocate the primary distribution line revenue requirement by non-coincident customer peak contribution within the class.

Q. Why is it inappropriate to solely use the NCP to allocate costs associated with distribution lines among the classes?

A. As explained in my direct testimony, the class should only pay for assets that the class uses, in some reasonable proportion to the use of those assets by the class. As a result, some primary distribution line plant, such as single phase line sections, should be predominantly allocated to customer classes which are the primary users of single-phase service. Or, phrased another way, these distribution line assets should only be allocated to the Extra Large Load class in the very small proportion by which they are used to serve the demand of that class. The larger demand customer classes, especially the Extra Large Load class, are served for Standard Service primarily by three-phase distribution lines; the current NCP-based allocation dwarfs the proportion of single-phase line sections used by the Extra Large Load customer class. The Extra Large Load customer class should not be unfairly burdened with carrying the amount of single phase primary

conductor revenue requirements assigned based solely from its class contribution to NCP, because that does not accurately reflect the way in which these assets are used to provide service.

Q. Please explain what constitutes Category 5 from your direct testimony (“Distribution Transformers”) and where those facilities would fall on the pictorial and ComEd Ex. 34.1.

A. These facilities are depicted, for overhead lines, as “transformer” and as “electric service station-pole type” on the “distribution lines” portion of the middle line of the ComEd pictorial. The pictorial does not reflect that, in reality, the “transformer” is a “community transformer” on public property, easement or ComEd right-of-way, while the “electric service station” (“ESS”) is on customer property only serving that customer. As discussed in my direct testimony, service by ESS is the primary way ComEd provides Standard Service to the Extra Large Load customer class. (*See* REACT 3.0C at 17:421-427.) For underground distribution lines, the pictorial depicts distribution transformers on the bottom row as “transformer” serving a residence, “network center” serving a commercial or apartment building, as indoor (effectively underground) distribution within an all-electric high-rise, as an “electric service station-ground type” at a commercial or industrial customer, and as a “railway substation” for the railroad class. Distribution transformers are shown as boxes (7), (12), (17) and (18) on the loss diagram; there is no specific 12 kV or 4 kV ESS box, but functionally they are similar to (17).

Q; How does ComEd allocate the costs of Category 5 assets, and how would you recommend allocating those costs?

A. To the extent that any customer is served by distribution transformer assets in excess of that customer's Standard Service, Rider NS assures that distribution transformer revenue requirements for transformer assets in excess of Standard are paid for directly by the customer. Consequently, the transformer revenue requirement in the retail delivery tariff is that associated with the Standard transformation. (See REACT Ex. 6.3, ComEd Response to REACT 6.01 (confirming that assets paid for under Rider NS are not part of rate base).) The aggregate distribution transformer revenue requirements are allocated to each retail customer class based upon the class NCP, and to individual customers within the class based upon the customer's NCP. Because Rider NS deals with the incremental revenue requirement due to non-Standard Service, I concur with this allocation approach for distribution transformer plant in the original ComEd rate proposal (ComEd Ex. 16.0R at 29:543-544). Customers who receive direct primary voltage service with no ComEd-owned transformation should receive a credit for avoided transformation revenue requirements.

Q. Please explain what constitutes Category 6 from your direct testimony ("Distribution Secondary Lines") and where those facilities would fall on the pictorial and ComEd Ex. 34.1.

A. These facilities are not depicted in the ComEd pictorial, but are depicted as boxes 15 and 19 in Ex. 34.1. They are used to serve multiple customers from a community transformer installation who are too far away for a secondary voltage service connection directly from

that transformer installation; distribution secondary lines normally do not extend more than a few hundred feet from the transformer which supplies power to them. Distribution secondary lines operate at low voltage (typically 120/240 V, 120/208 V, 277/480 V, etc.), and by definition below primary distribution voltages.

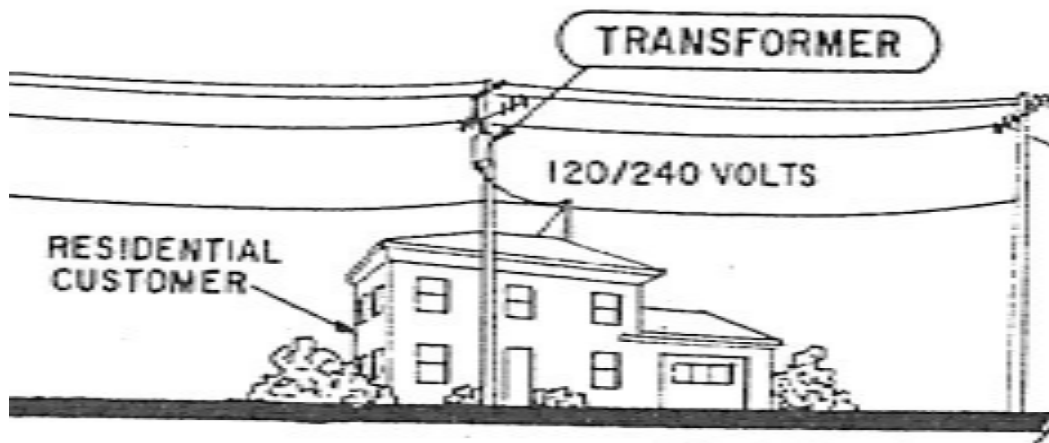
Q; How does ComEd allocate the costs of Category 6 assets, and how should those costs be allocated?

A. The aggregate revenue requirements of secondary distribution lines have been, and in the original ComEd rate proposal were to be, allocated to each class by the class contribution to NCP and within the class by each customer's NCP. ComEd's original approach was entirely inappropriate. Many of the customer classes have essentially no requirement for distribution secondary lines as part of their service; this is particularly true of the Extra Large Load customer class and the over-10 MW portion of the HV class. Mr. Alongi, in his rebuttal testimony, appears to now agree that secondary distribution lines should be excluded from the revenue requirements allocated to customers with over 400 kW demand (essentially the Large, Very Large, Extra Large, and presumably HV classes of customers). (ComEd Ex. 49.0, at 23:514-520.) It appears Mr. Alongi is moving at least part way toward excluding costs to the Extra Large Load class that it simply did not cause.

Q. Please explain what constitutes Category 7 from your direct testimony (“Secondary Service Conductors”) and where those facilities would fall on the pictorial and ComEd Ex. 34.1.

A. These facilities are covered wires or cables, owned by ComEd, and used to connect from a community transformer or distribution secondary line to a customer, and an example is shown in the ComEd pictorial in the middle row of the diagram, as wire, operating at 120/240 V, extending from the “transformer” to a residential customer’s house. (See Diagram 3 below.) Secondary service conductors are shown in the ComEd Ex. 34.1 loss diagram as the lines from boxes (12), (14), (15), (17), (18) and (19) to the customers (C) below them, at least to the extent that the boxes represent community facilities.

Diagram 3 - Secondary Service Conductors



However, most very large and extra large load class customers are served by an ESS, such as the “electric service station-pole type” shown in the middle row of the ComEd pictorial. (See Diagram 2.) In Diagram 2, “electric service station-pole type” serves an “industrial or commercial customer”. ComEd’s General Terms and Conditions do not

allow ComEd to own and operate secondary service conductors from a transformer at an electric service to the customer served by that transformer. (See Original Sheet No. 164.)

Q; How does ComEd allocate the costs of Category 7 assets, and how should those costs be allocated?

A. It is my understanding that the aggregate revenue requirements of secondary service conductors are allocated to the retail distribution customer classes on the basis of the NCP-SEC (i.e. the NCP for secondary service) loads of each class, and allocated within each class by the secondary NCP loads of the customers within the class. (ComEd Ex. 23.0, at 7:144-149.) It is entirely inappropriate to use class NCP (and, depending on how it is calculated, NCP-SEC) to allocate secondary service conductor costs between the classes. The larger customer classes, especially the Extra Large Load class, are served primarily by an ESS and utilize virtually no significant secondary service conductor assets in proportion to their load levels, and should not be unfairly burdened with carrying the share of secondary service conductor revenue requirements derived from their classes' contribution to NCP demand.

Q Please review how the largest customer classes receive their service relative to the seven delivery system elements above and the ComEd loss diagram?

A. The largest load classes (excluding the railroad class) receive their Standard service as follows:

1. High Voltage class customers (HV) receive their service either at the high voltage level (345 kV to 69 kV) directly as in the "C" attached to box (20), providing their own transformation to internal utilization voltages, or they receive their service through HV lines onto their property and utilize ComEd owned ESS transformers to primary level utilization voltage as in the "C" attached to box (1).

2. Extra Large Load class customers (above 10,000 kW demand by definition) receive their power from primary distribution lines, either:

a. directly at the primary distribution line voltage, with the customer using its own transformers, and customer-owned service connections to the customer-owned transformers, as in the “C” attached to boxes (4) and (9).

b. through primary voltage distribution line connections to ComEd owned ESS transformers on the customer’s property, with customer-owned service connections from the ComEd owned ESS transformers, as in the “C” attached to boxes (7) and (12).

Extra Large Load Class customers represent extremely large concentrations of load at a relatively limited number of individual customer property sites. The relative cost of service per kW delivered for the class as a whole is the most efficient and economical of all the customer classes; typically high-capacity main-stem primary distribution lines go directly to the customer property

As is clear from this summary, the over-10 MW High Voltage class and the Extra Large Load class simply do not, as a general matter, use a significant amount of certain assets (such as 12 kV single- and two-phase and 4 kV primary distribution lines) as part of Standard Service, yet ComEd still bills these classes far beyond the proportion of use by the Extra Large Load customer class compared to the use by other customer classes.

Q. What is your conclusion from the discussion of both the elements of service and the relative utilization of those elements of service by the various classes of retail customers?

A. There are very significant economies of scale in the provision of retail delivery service to the members of the Extra Large Load class of customers, compared to each other customer class. In other words, the Extra Large Load and largest High Voltage customers use a relatively small proportion of ComEd’s distribution assets for the large

volume of energy that they consume through those assets. The benefit of those economies of scale and low distribution facility usage are not reflected in the cost allocation proposal in Mr. Alongi's revised direct testimony. (*See, e.g.*, ComEd Ex. 16.0R, at 19:408-24:441, 27:502-29:536 (discussing ComEd rates to Extra Large Load and High Voltage customer classes).) Likewise, although Mr. Alongi's rebuttal testimony recognizes that some assets should not be assigned to the Extra Large Load customer class, it fails to fully grasp the level of assets that have been inappropriately allocated to that class.

It is wholly inappropriate to allocate revenue requirements related to primary distribution lines, secondary distribution lines, and secondary service conductors based solely on the NCP contribution of the class, as ComEd has proposed. In order to accurately reflect cost causation, ComEd needs to take a more refined approach that reasonably allocates the plant in service components in proportion to their predominant use by class. Only then will ComEd's allocation become compliant with the requirement in the Act that the retail delivery service rates applied to each class be based on the cost causation by the members of that class.

B. ComEd's Insistence That Certain Assets Should Be Fully Included In The Costs Allocated To The Largest Customers Counsels For An Investigation Into What Assets Serve the Extra Large Load Class

Q. Did you include in your direct testimony recommendations regarding specific categories of assets that should be excluded from the costs assigned to the Extra Large Load customer class?

A. Yes. I recommended the exclusion of the revenue requirements associated with specific plant categories, including single-phase and two-phase primary distribution lines, certain low-capability three-phase line sections, secondary distribution lines and ComEd owned secondary service conductors from the rates charged to the Extra Large Load class customers. (*See* REACT Ex. 3.0C, 18:443-19:459.) Given that such categories of costs are not associated with providing Standard service to the Extra Large Load customer class, and ComEd's recovery of non-standard costs under Rider NS, it is inappropriate to assign these categories of costs to the Extra Large Load customers. IIEC witness Mr. Stowe likewise testified with respect to allocation of the revenue requirements of plant in service involving single-phase and primary distribution circuits. (*See, e.g.* IIEC Ex. 3.0 at 26:576-590; ComEd Ex. 49.0 at 24:524-535 (describing Mr. Stowe's analysis) .)

Q. How did Mr. Alongi respond?

A. Mr. Alongi correctly notes in his rebuttal testimony that Rider NS does not cover off-property primary distribution line assets that help to serve smaller-demand non-standard components of the load of Extra Large Load class customers. (ComEd Ex. 49.0 at 26:581-27:610.)

Q. Do you agree?

A. It is true that many customers, particularly in the residential and very small commercial and lighting customer classes, receive their single-phase low voltage service from transformers connected to three-phase primary distribution lines (as well as from single-phase and two-phase line sections). In preparation of my direct testimony, based on my experience at ComEd as a distribution planning engineer, a distribution design engineer, and as a manager of engineering for various divisions, I considered the revenue requirement impact of such facilities to be *de minimis*, and did not incorporate them. The key issue here is that some customer classes make disproportionately higher, and disproportionately lower use of different elements of ComEd's electric distribution system than is reflected by use of ComEd's various allocators.

Because ComEd allocates assets that are not normally used to a significant degree by Extra Large Load class customers for Standard Service on the basis of the NCP loads of each class, the Extra Large Load class pays a disproportionately large share of costs it did not cause. Based on cost causation principles, as well as my understanding of Illinois law and Commission policy from a non-lawyer's perspective, the Extra Large Load class -- like all other classes -- should only pay for the costs they cause.

Q. Is there a way that ComEd could solve this problem?

A. Yes. ComEd could solve this problem quite simply by (1) identifying the limited capability assets used to serve the Extra Large Load customer class (as I have described them in my direct testimony and above, which includes, for example, single-phase 12 kV

wires and 4 kV lines); and (2) only charging the Extra Large Load customer class for those components of the limited capability assets used by that class in proportion to the use of such assets by that class compared to their use by other customer classes.

Q. Are there principles that should drive ComEd's analysis of the assets that are used to provide service to the Extra Large Load customer class?

A. Yes. Allocation of revenue requirements to a customer class means allocation to the members of the class as a group. Like any statistical group, there will be differences between the members within the group, though they can be described statistically by some form of normal distribution bell curve.¹ The analysis should use as much available customer-specific distribution facilities and cost information as reasonably practical and use simplifying assumptions such as system average unit costs and adders and/or multipliers, as appropriate, to account for those distribution facilities and costs that are not specifically identified or available, but are in fact used in providing service to the class.

Although there are exceptions, the following four (4) rules are generally true, and should be followed in performing the analysis:

1. **Allocation of single-phase primary distribution line sections should be *de minimis*.** Single-phase line sections are predominantly used by the single-phase service customers and should be predominantly allocated to those classes (residential, watt-hour, small commercial and lighting), with a minimal allocation to classes including the Extra Large Load and High Voltage classes that covers the actual costs caused that not covered by ComEd Riders. For single-phase primary distribution line sections, the overwhelming majority of both numbers of

¹ I am not suggesting that the number or type of assets used by the Extra Large Load class is represented by a strict normal distribution; rather I only seek to illustrate that outliers can -- and in fact do -- exist. The existence of outliers does not in any way invalidate the analysis.

customers and kW demands are associated with residential, very small commercial, and lighting loads. Each of the single-phase line sections are fed ultimately from high capacity three-phase main stem feeders. In other words, the distribution of number of customers using single-phase wires and total kW demand of those using single phase wires are not reflected by class NCP, and certainly not for the Extra Large Load class.

2. **Allocation of two-phase primary distribution line sections should be *de minimis*.** For two-phase primary distribution line sections, the overwhelming majority of numbers of customers and kW demands are a combination of customer classes requiring only single-phase service and some customers requiring relatively small kW demand three-phase service specifically at 120/240 V, three-phase, four-wire, which can be supplied by two transformers in “open-delta” configuration. Most open-delta three phase customers would be in the small or medium load classes. Very few open-delta customers would be in the large load class with more than 400 kW demand. All the two-phase line sections are ultimately fed from high capacity three-phase main stem feeders. Two-phase line sections are predominantly utilized by the single-phase service customers and customers of the small and medium classes with small, specialized three-phase requirements, and the revenue requirements should be predominantly allocated to those classes, with minimal allocation to classes including the Extra Large Load and High Voltage customer classes to reflect costs that are, once again, not covered by ComEd Riders. As with single-phase primary distribution line sections, using class NCP vastly overburdens the Extra Large Load class relative to their limited use of these assets.

3. **Allocation of three-phase low capacity line sections should be *de minimis*.** Three-phase low capacity line sections are utilized predominantly by all classes *except* the Extra Large Load and High Voltage classes, and the revenue requirements should be allocated predominantly to the other classes, and perhaps minimally to the Extra Large Load or High Voltage classes to reflect the non-Standard Service use that is **not** covered by Rider NS, Rider DE, or any other rider. For low-capacity (in demand-carrying capability) three-phase primary distribution line sections, members of all customer classes up to but not including the Extra Large Load and High Voltage classes make extensive utilization of such low-capability line sections as part of Standard Service. These low-capability three-phase line sections are ultimately fed from high capacity three-phase main stem feeders. Once again, use of a class NCP allocator results in cross-subsidization of the other classes by the Extra Large Load and High Voltage classes.

4. **Three-phase high capacity main stem feeders should be allocated using class NCP.** Three-phase high capacity main stem feeders are utilized by all (except the High Voltage class) classes in rough proportion to their non-coincident demand, and the revenue requirements derived from such high-capacity three-phase facilities should be allocated on that basis. That is, for high capacity three-phase main stem feeders, all classes of customers make use of these in proportion to

their NCP contribution. Thus, using class NCP to allocate these assets is fair and reflects cost causation.

Q. In light of Mr. Alongi's rebuttal testimony, do you still advocate the "total exclusion" language of your direct testimony with respect to allocation of anything involving primary distribution lines other than high capacity main-stem feeders?

A. No. Upon further consideration, although the impact will be small, it appears valid for ComEd to recover certain costs through Rate RDS for facilities used by Extra Large Load class customers that I did not previously consider part of Standard Service. However, Mr. Alongi's rebuttal testimony just highlights the very fact that is the centerpiece of REACT's message -- that is, that ComEd should actually provide information (or do a study if it does not have the information) to determine which classes of customers use which facilities, and to what degree they use those facilities.

In other words, to the extent that the assets used to serve the Extra Large Load customer class deviate from those used to provide Standard Service to the class or are used to provide non-standard service and not recovered under Rider NS or another rider, those assets should be identified with much greater precision than ComEd has presented them in this proceeding. Mr. Alongi's rebuttal testimony has led me to understand that in the case of the Extra Large Load Class customers -- with whom my testimony is concerned -- some off property facilities exist that are not covered by Rider NS. Whereas I originally recommended for complete exclusion, based on my understanding that some facilities used by the Extra Large Load class customers are not covered under Rider NS, I support recovery through Rate RDS for **the class's fair share of those facilities**. Although I

believe the impact will be small, such facilities used by the Extra Large Load class customers should be considered in the allocation. This approach is consistent with REACT's core principal that ComEd has the right to recover all of its prudently-incurred costs, but that it is critical that ComEd recovers those costs only from the customers that cause those costs. But, of course, Mr. Alongi's position begs the question of which facilities are used by which customers, which highlights why ComEd should provide that information, as REACT has requested.

Q. How are you suggesting the Extra Large Load customer class should be charged through Rate RDS for assets that have insufficient capacity to provide Standard Service to the class?

A. I want to be perfectly clear: Mr. Alongi's criticism boils down to a concern that some assets that I have identified as having insufficient capacity to provide Standard Service to the Extra Large Load customer class nevertheless may be used for ComEd's convenience to provide Standard Service to certain class members or may be used to provide non-standard service to certain class members, while not being covered by Rider NS. While this may be a legitimate theoretical concern, ComEd has thusfar refused to provide information about the assets used to serve the Extra Large Load customer class, making it impossible to determine whether this should be a material concern to the Commission as it looks to set cost-based rates. The Commission should require ComEd to undertake the study necessary to identify those assets that the Extra Large Load customer class uses. In the absence of such information, based on my experience at ComEd as a distribution planning engineer, a distribution design engineer, and as a manager of engineering

overseeing diverse components of the ComEd system,, I am led to conclude that the impact of adding these costs to the Extra Large Load customer class's allocation in the proportion to which this class uses these assets would be small, and would be far smaller than ComEd's current or proposed allocation.

Q. Why would the impact of adding these costs to the Extra Large Load customer class's allocation in the proportion to which this class uses these assets be small?

A. It is not unusual for some Extra Large Load Class customers to have additional non-standard service connections fed by single-phase, two-phase or 4 kV primary line sections, for a generally quite small proportion of their MKD, for such things as parking lots, emergency lighting, water/sewer pumps, and the like. However, they generally serve a very small proportion of the Extra Large Load customer's demand, and result in minimal utilization of the overall single-phase, two-phase or 4 kV primary line sections in the total distribution primary lines asset base compared with the Extra Large Load customer class's NCP relative to the other classes.

Q. Can you provide an example to illustrate this point?

A. Yes. Please refer to ComEd Ex. 49.5. An Extra Large Load class customer must have a demand in excess of 10,000 kW. Please envision another point of service in the center of the "U" shape formed by the diagram with a demand of 10,005 kW, connected to the "3-Phase Main Line," representing a service point that is served as the principal point of service to the customer (comparable to the Standard Service point if the customer did not have any non-standard points of service).

Further visualize customers A through D instead as points of the service to the same single facility, which happens to be a member of the Extra Large Load customer class. Further assume that, as is true for the vast majority of the class members with multiple service points, A through D represent one “large” (both in terms of voltage and volume of energy delivered) and several smaller points (again, both in terms of voltage and volume of delivery) of non-Standard Service under Rate NS. The total load depicted in the exhibit is 12,000 kW, with 1995 kW from the non-standard points of service depicted by A through D.

ComEd must provide for the entire load of the Extra Large Load class customer of 12,000 kW. That means that ComEd must bring high capacity main-stem feeder capability to the customer’s property line. This is true regardless of whether the customer is receiving Standard Service at a single point of service, or non-standard service at a variety of points of service. The non-Standard Service smaller delivery points (i.e. A through D) involve minimal primary distribution conductor extensions of small capacity three-phase tap and a single-phase tap off the main stem in the immediate vicinity of the customer’s property. The most significant primary distribution line plant involved is the main stem feeder or feeders going back from the customer to the distribution substation. Naturally, different Extra Large Load class customers may use somewhat more or somewhat less off-property primary distribution line equipment that would not be suitable for Standard Service.

Q. To what degree are single-phase and two-phase primary distribution line sections represented in ComEd's overall primary voltage distribution system?

A. In answer to REACT 7.04, ComEd presented the following data:

a.	1 Phase Miles Overhead	13, 472
b.	2 Phase Miles Overhead	3,719
c.	3 Phase Miles Overhead	17,662
d.	1 Phase Miles Underground	14,484
e.	2 Phase Miles Underground	1,821
f.	3 Phase Miles Underground	13,439

The total miles of primary distribution lines equal 64,597; the total of single and two-phase overhead: 17,191; the total of single and two-phase underground: 16,305; the total of all single- and two-phase: 33,496. Consequently, single- and two-phase primary distribution line facilities represent 33,496 miles out of 64,597 miles, or 51.8% of all primary distribution line miles!

There are at most 57 customers in the Extra Large Load customer class. If we assume, as an unrealistic extreme, that each of them solely utilizes 5 miles of single- and two-phase line facilities (that are not already covered by Rider NS or another Rider) in addition to the three phase facilities serving their MKD, that would be only 285 miles out of 33,496 miles, or 0.85% of the total single- and two-phase facilities; vastly less than the Extra Large Load Class share of NCP demand, which assigns over 3.5 times the costs to these customers when allocated at NCP.

Q. How does the fact that the impact would be small impact rate design?

A. ComEd is charging the Extra Large Load class customers for categories of assets that the *class* does not use in even close to the proportions to which it is being charged. Mr. Alongi's concern could be easily satisfied by ComEd refining its allocation methodology to reasonably reflect the differing levels of utilization of the types of primary distribution line plant as described above. Mr. Alongi's testimony simply underscores the need for an evaluation of the assets used to serve the Extra Large Load class. With such an evaluation, ComEd will be able to determine, to a reasonable level of precision, the non-Standard Service assets used to serve class members that are not covered under Rider NS, Rider DE, or other charges, and then allocate those costs to the class.

Q. Does ComEd have the ability to adjust the allocation of revenue requirements to reflect the different degrees to which the Extra Large Load class uses different types of primary distribution line plant?

A. Absolutely. ComEd has admitted that it performs thousands of such analyses -- every time a customer requests new or revised service, requests a new meter or meter-related facilities, and whenever there is a service outage, ComEd identifies the particular assets used to serve a customer. (*See* REACT Ex. 6.3, ComEd Response to REACT 6.28.) Further, in the context of this proceeding, ComEd has repeatedly demonstrated its capabilities are well beyond the limits it has asserted in response to REACT's repeated requests for this information.

Q. What has ComEd done in this proceeding to suggest that it has the capability to reasonably identify assets used to serve the Extra Large Load customer class?

A. In ComEd's description of the methodology used for its primary/secondary study, ComEd examined its plant accounting records, geographic information system records (using, among other systems, CEGIS), customer billing records, meter records, and other sources. According to its description, ComEd was able to get down, on a detailed, sampling level, to the proportion of utility poles that supported primary conductors, secondary conductors, or a combination of both -- a level of detail that supported my proof of concept conclusion in my direct testimony. In developing the Exemplar Primary Voltage Distribution customer class ("PVD class"), ComEd was able to, through metering records, determine the metering and related voltage information for each point of service. In his rebuttal testimony, Mr. Alongi admits that much of the necessary information is already contained in the maps that ComEd maintains: "ComEd's maps are used on a daily basis by ComEd engineering, operating and construction personnel for a variety of purposes that require the information on ComEd's maps be an accurate record of the distribution system and the facilities in the field." (ComEd Ex. 49.0; 33:737-739.) This is consistent with my experience; ComEd's maps can be relied upon as a central input to the analysis of the assets used to serve the Extra Large Load customer class.

ComEd also has gone to great lengths in this proceeding to identify the particular assets that are used to serve the Railroad class and to provide Street Lighting Service. (See ComEd Ex. 16.4R (power flow analysis to Railroad Class customers); ComEd Ex. 16.6R (connections for City of Chicago Dusk to Dawn lighting).) Unlike for the Extra Large

Load customer class, ComEd has provided specific location and voltage information regarding the assets used to serve both. (*See, e.g.*, REACT Ex. 6.3, ComEd Response to CTA 3.04 (referring to CTA 3.04 Attachment 1 (Confidential), one-line diagrams); ComEd Ex. 49.7 and 49.8.) That level of precision simply has not been provided to the Extra Large Load customer class, but ComEd presents no basis for why it cannot replicate its efforts. (*Compare* REACT Ex. 6.3, ComEd Response to CTA 3.04 *with* REACT Ex. 6.3, ComEd Response to REACT 6.40 (refusing to identify with specificity 4 kV service points for Extra Large Load customer class, or whether such assets were paid for under Rider NS and thus outside of the class revenue requirement).)

The personnel and data resources of ComEd were adequate to carefully parse the data for the primary/secondary, railroad and street lighting studies; the same data resources and experienced personnel should be adequate to make a reasonable adjustment of the allocation rates of the various different types of primary distribution line facilities to the correct customer classes.

The issue is whether ComEd is willing take the initiative to develop more accurate allocation, not whether ComEd has the necessary data and competent people to perform such an allocation with respect to the Extra Large Load class.

Q. Should the Commission take any action on this matter?

A. Yes. As recommended in my direct testimony, the Commission should compel ComEd to undertake such a study for the Extra Large Load class and then adjust its rates to

reflect the results. This should be a priority for the Commission, even if it has not been for ComEd, particularly given the magnitude of the increases ComEd has proposed for the Extra Large Load customer class, and the potential dollar impact of ComEd's proposal. (*See generally* Direct and Rebuttal Testimony of REACT witness Fults, REACT Exs. 1.0C and 4.0.) Without this additional data, it would be wholly inappropriate for the Commission to assign to the Extra Large Load customer class any more than the system-average increase that the Commission determines to be appropriate in this proceeding.

III.

COMED FALSELY IMPLIES THAT I RECOMMEND INDIVIDUALIZED COST OF SERVICE STUDIES AND/OR RATES

Q. Do you have any initial comments related to Mr. Alongi's testimony?

A. Yes. Mr. Alongi's rebuttal testimony inaccurately implies that I recommended in my direct testimony that the Commission should compel ComEd to create individual rates and/or individual cost of service studies. (*See* ComEd Ex. 49.0, at 28:627-29:650.)

Q. Was that your recommendation?

A. No. I made no such recommendation in my direct testimony and I make no such recommendation in this testimony. What I *do* recommend is that the Commission ensure that ComEd's rates are actually cost based. Determining if rates are cost based necessitates understanding what costs underlie the rates -- that is, the cost and related revenue requirements of the assets that serve a given rate *class*. While the assets used to serve the Extra Large Load class, to some extent, necessarily must consist of the sum of the assets used to serve each of the customers, my focus is on the Extra Large Load

customer class as a whole. If ComEd cannot explain how the costs that underlie its proposed rates for the Extra Large Load class were caused by that class, ComEd cannot reasonably claim that those rates are cost based. ComEd should be required to provide accurate and complete information about what those assets are, so that the Commission can actually determine if ComEd's proposed rates are cost based. I am in no way advocating individual customer rates or individual cost of service studies. I am advocating that ComEd, through a study involving statistically valid sampling (to be explained and justified by ComEd), reasonably reflect the degree to which various types of distribution assets are utilized by the Extra-Large Load Class of customers, vis-à-vis other customer classes, in its rates for each class.

Unfortunately, ComEd's current approach is to make allocations based upon allocators that are not grounded in reality and that disregard well-established cost-causation principles. In order to accurately reflect cost causation, ComEd needs to take a more refined approach that reasonably allocates the plant in service components in proportion to their predominant use by class. This is especially true in the case of the Extra Large Load class, where some lower-grade assets -- to the extent they are not covered by Rider NS or for the convenience of ComEd -- may be used to serve this class quite infrequently or to a substantially lesser degree. Certainly they are used less frequently or to a lesser degree than the allocation under NCP-SEC would dictate. Only once an additional, more detailed, analysis is undertaken will ComEd's allocation become compliant with the requirement that its retail delivery service rates applied to each class be based on the costs caused by the members of that class.

IV.

**WHILE INSTRUCTIVE, THE REAL
BENEFIT OF THE PRIMARY/SECONDARY STUDY IS
TO PROVE COMED CAN TRACE ASSETS TO THEIR COST CAUSERS**

Q. Did you review any additional testimony beyond ComEd witnesses Mr. Alongi and Mr. Garcia with regard to the primary/secondary split and proposed (or Exemplar) rate classes?

A. Yes. I reviewed the direct testimony of IIEC witness Robert R. Stephens with regard to IIEC's Primary subclass proposal and IIEC's criticism of ComEd's Exemplar primary class.

Q. The direct testimony of IIEC witness Mr. Stephens highlights concerns about the proposed development of a PVD Class, including his concern that the proposed primary/secondary split creates an "unnecessary complication". Do you agree with Mr. Stephens in this respect?

A. Yes. The creation of a PVD class would create an unnecessary complication. ComEd's criterion for drawing individual customers into the PVD class is simply the existence of at least one point of service with primary voltage metering and at least one point at which the customer's utilization voltage is at a primary voltage level, without regard to other aspects of that customer's service. The PVD class would include wildly disparate customers from most of the presently existing customer classes -- from 345 kV transmission service connections to a steel melting facility to 4 kV single phase connections to, say, a municipal pump. The customer would be sucked into the PVD

class even if its predominant service demand point or points of service were not primary metered.

As explained above, the primary/secondary survey is useful to the extent it proves that ComEd can successfully identify the assets used to serve the Extra Large Load class, and use that information to create a proper allocation. The confusion cited by Mr. Stephens highlights the limited usefulness of the Primary Exemplar class.

Q. Have you identified any reasons why lumping together all of the customers that ComEd proposes for its Exemplar Primary class would be problematic?

A. Yes. The primary reason that the proposed PVD customers should not be lumped together is that the on-site facilities used to serve and points of service themselves would be highly diverse within the Exemplar class.

Q. Would the off-property distribution delivery plant be similar for members of the Exemplar Primary class?

A. No. Except for the High Voltage class, the off-property distribution delivery plant (and related revenue requirement) to serve the same customer's demand (monthly kilowatts delivered) would generally be the same whether the customer had a primary metering point or not, as long as the total demand of the customer at that property was the same. In other words, some of the "Primary" customers would share more in common with their former class than with other members of the Exemplar Primary class.

Q. Please explain your answer.

A. ComEd has the obligation to provide for a customer's maximum demand ("MKD") at the customer's property, whether the customer is receiving standard service or has non-standard service requirements for which that customer pays incremental revenue requirements under Rider NS. The off property facilities, from the bulk power system, through the transmission voltage delivery system, through the transmission and distribution substations and through the primary distribution system may well be the same (or at least highly similar). This similarity is without regard to whether:

1. The customer takes a three-phase primary voltage as his utilization voltage (and either uses it directly or provides his own transformation(s) to lower voltages);
2. ComEd provides a step down from 34 kV or 12 kV primary distribution lines to 2160/3740 V utilization voltage; or
3. ComEd provides step down from 34 kV or 12 kV or 4 kV to a secondary level utilization voltage (120 to 480 V).

Instead, as discussed above, it is the on-site use of primary or secondary metering, or transformation to a lower primary voltage, or transformation to a secondary voltage that makes the power and energy delivered suitable for the customer on the customer's property.

Q. The discussion above appears to focus on larger customers; what about the customer classes with lower demand, such as residential or small commercial who may fall under the definition of "Primary?"

A. In the case of low-demand customers that may be fed from community transformer facilities on public or ComEd right of way or via secondary voltage distribution lines and secondary voltage ComEd-owned service connections, ComEd must still bring the

primary voltage facilities described above either adjacent to the customer or within a few hundred feet if the supply is from community secondary voltage lines.

In other words, regardless of whether the customer is large or small, residential, commercial, or industrial, ComEd must bring primary voltage conductors to, or very close to, the customer's property. Based on the customer's demand and specific requirements (standard or non-standard), the off-site primary voltage circuit capability must be there.

Q. What is your conclusion with respect to the PVD class?

A. The Commission's Special Investigation Order (ICC Docket No. 08-0532) called on ComEd to distinguish between primary and secondary distribution costs. My interpretation of this directive is that the Commission intended ComEd to separately determine how **primary distribution facilities costs and secondary distribution facilities costs impact each customer class separately, requiring ComEd to adjust class rates accordingly.** The PVD class concept evades the responsibility to separately address primary and secondary facilities costs and their related revenue requirements as they should impact each rate class separately. All rate classes that do not have primary voltage metering and have a primary level utilization voltage are lumped together in the PVD class, without having their primary and secondary cost responsibilities established independently, class-by-class.. The same thing is true of the customers not included in the PVD class -- they are also lumped together without having their primary and secondary cost responsibilities established independently, class-by-class.

Q. Has ComEd undertaken any studies that could provide the basis for the type of cost allocation method that would be appropriate?

A. Yes. As I have stated before, the primary/secondary study provides an adequate proof of concept. Mr. Alongi describes primary and secondary distribution facilities in his Revised Supplemental Direct testimony as follows:

Primary distribution facilities include wire, cable, attachments portions of poles, and conduit used to distribute electricity at a primary voltage (i.e., at or above 4kV phase-to-phase but below 69 kV phase-to-phase). Secondary distribution facilities include wire, cable, attachments, portions of poles, and conduit used to distribute electricity at a secondary voltage (i.e., below 4 kV phase-to-phase), which on ComEd's system is at or below 480 volts.

(ComEd Ex. 21.0R at 3:71-4:76.)

Q. How should ComEd be required to address the issue of the differences between primary and secondary costs?

A. The best way to achieve the Commission's objective of separately addressing primary versus secondary distribution costs would be for the Commission to specifically require ComEd to:

1. Determine, by a reasonable sampling methodology, which elements of primary distribution facilities (three-phase, two-phase, single-phase, high-capacity vs. low capacity conductors, etc.) and in what approximate proportions, those facilities are utilized by each customer class, and assign the related proportional revenue requirements to each class.
2. Allocate distribution transformer costs and related revenue requirements to each class in proportion to use; a customer that receives a direct primary utilization voltage at a point of service with no ComEd transformation should get a credit for the avoided distribution transformer revenue requirement.
3. Determine, by a reasonable sampling methodology, what elements of secondary distribution facilities (secondary distribution lines, secondary service conductors, etc.) and in what approximate proportions, those facilities are utilized by each

customer class, and assign the related proportional revenue requirements to each class. Certainly, ComEd should cease using solely class NCP as an allocation method when it has provided no evidence that the classes use these assets in that proportion.

The revenue requirements thus assigned on a class-by-class basis can then be summed and allocated within the class by the appropriate coincident or non-coincident peak contribution. The resulting rates would substantially more accurately reflect the differing class-by-class costs that drive their respective revenue requirements. This approach more nearly achieves the objective of the Commission's Investigative Order, and would be entirely consistent with the analysis necessary to identify the assets used to serve the Extra Large Load customer class.

V.

CONCLUSIONS

Q. Please summarize the conclusions and recommendations on Rebuttal.

A. The Commission should draw three (3) conclusions based upon this rebuttal testimony:

- **First, the allocators in ComEd's ECOSS are fundamentally flawed.** It is apparent that ComEd has assigned to the Extra Large Load customer class certain categories of assets that this class either does not use or uses at a level much lower than suggested by ComEd's use of a NCP allocator. The Extra Large Load and High Voltage classes' allocations for certain assets are vastly disproportionate to their use of those assets.
- **Second, the Commission should order ComEd to perform a study to analyze the assets used to provide service to the Extra Large Load customer class.** It is imperative that the Commission compel ComEd to undertake a study of the assets used to serve the Extra Large Load class, and design rates based on the class's fair share of the assets that the class actually uses. While some "limited capability" assets are used to serve Extra Large Load class customers that are not recovered under Rider NS or other mechanisms, the study should identify those assets and allocate to the Extra Large Load customer class only its fair share of those "limited capability" assets. ComEd has the capabilities to perform such an analysis, but repeatedly has refused to undertake such a study. Unless and until such a study is completed, ComEd's rates will not comply with the requirement

959 that its rates be cost-based. As a result, to the extent the Commission assigns any
 960 rate increase to the Extra Large Load customer class, it should be no greater than
 961 the system-average increase that the Commission approves in this proceeding.

962 • **Finally, ComEd's Exemplar Primary Rate Class Should Be Rejected**
 963 Although of no value to design a separate rate, ComEd's primary/secondary split
 964 study provides sound proof that ComEd can complete the recommended study.

965

966 **Q. Does this complete your testimony?**

967 **A.** Yes.